# Beach Nourishment - Local Perspectives: Broward County, Florida

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Broward County, Florida, is located on the southeast coast of Florida and fronts the Straits of Florida, that portion of the western Atlantic Ocean, which lies between Florida and the Bahama Islands. The 24 miles of coastline in Broward County is all sandy beach. Limited fetch due to the Bahama Banks and the presence of increasingly shallow hardbottoms offshore of the County result in a generally mild wave climate.

Most of the beaches along Broward County are chronically eroding due to limited sedimentary input, the presence of two stabilized inlets, a fully developed shorefront, and periodic northeast storms and tropical systems. In response to concerns over erosion, the U.S. Army Corps of Engineers conducted a study of Broward's coastline in 1963. Subsequently, the 1965 River and Harbors Act authorized the Broward County Beach Erosion Control and Hillsboro Inlet Navigation Project. The authorization divided the County into three separable segments to be constructed by local interests with subsequent reimbursement of the Federal share of the eligible costs. Authorization for Federal participation was extended to 50 years from the date of initiation of construction by the 1996 Water Resources Development Act (WRDA). The 1999 WRDA further authorized the sponsor to be reimbursed for preliminary engineering and design upon execution of a construction contract.

Six Federally assisted, reimbursable projects have been conducted in Segments II and III; no Federally authorized work has been undertaken to date in Segment I. The projects occurred in 1970 in Pompano Beach and Lauderdale-By-The-Sea (2.8 miles in Segment II); 1976 at John U. Lloyd Beach State Park (JUL, 1.5 miles in Segment III); 1979 at Hollywood and Hallandale (5.2 miles in Segment III); 1983 at Pompano Beach and Lauderdale-By-The-Sea (5.2 miles in Segment II); 1989 at JUL (1.5 miles in Segment III), and 1991 at Hollywood and Hallandale (5.2 miles in Segment III). All projects involved dredging material from borrow areas offshore and pumping the sand onto the beach.

Project performance has exceeded design expectations. In Segment II, the project is nearly self sufficient due to sand bypassing from navigation dredging at Hillsboro Inlet. In Segment III, erosion is severe. The deep-draft channel and rock jetties at Port Everglades, a Federal Navigation Project, block the predominantly southerly littoral drift and cause chronic sand starvation along the eight miles of Segment III. Although more frequent periodic nourishment has been undertaken along Segment III to

counter the chronic erosion, the projects have nevertheless met or exceeded the calculated performance intervals.

Previous projects in the County have addressed specific areas of beach and have been undertaken at different times and intervals. In order to address the erosion problem on a regional basis, the County has proposed to conduct a comprehensive nourishment project. The planned project will obtain sand from five offshore borrow sites and place the material along 11.8 miles of beach, including all or parts of Pompano Beach, Lauderdale-By-The-Sea, Fort Lauderdale, JUL, Hollywood, and Hallandale Beach. A General Reevaluation Report with Draft Environmental Impact Statement has been prepared by the County in order to justify the fill placed along Fort Lauderdale (not previously constructed but authorized for periodic nourishment) and for placement of three erosion control structures at JUL. The Jacksonville District of the Corps of Engineers is working closely with the County in the preparation of this decision document. The total cost of the project is estimated at $45 million, with a calculated Federal share of $26 million. The project is being carried out by the County, with subsequent reimbursement of the Federal share of the eligible costs. In a separate and as yet non-Federal effort, the County is exploring the feasibility of implementing sand bypassing at Port Everglades Inlet in order to sustain the nourished beaches Segment III.

Beach erosion control must continue in Broward County because beaches are the linchpin of the area's economy. The County's beaches contribute $600 million annually to the County's economy, creating 18,000 jobs and generating almost $30 million in local tax revenues, including $10 million for the local school district. Broward's beaches protect from storm damage $4 billion in upland property. From a statewide perspective, out-of-state visitors to Broward's beaches have a $590 million impact on the economy of the State of Florida, create 19,000 jobs in the state, and produce $19 million in annual State tax revenues. Florida's beaches in turn contribute $430 million in annual personal and corporate Federal income tax revenues (Stronge, 1994; Stronge & Schultz, 1997; Stronge, 1998). It is clear that thriving local and regional beach-powered economies are integral to thriving State economies, which in turn are necessary ingredients in a thriving national economy. Indeed, it is apparent that beaches are truly a national asset, since 85% of U.S. travel and tourism occurs in coastal states and beaches are the preferred destination of tourists (Houston, 1995, 2002).

Beaches are vital economic and environmental components of the Nation's infrastructure, fulfilling a number of necessary functions. Beaches provide protection from storm wave and coastal flood damage; generate substantial revenues for local, state, and Federal governments; and serve as essential habitat for a variety of plants and animals, some endangered or threatened. Aesthetically and socially, beaches are parks, enjoyed by a multitude of visitors from all over the United States and the world. Beaches are truly the Nation's jeweled necklace.

The current Federal policy of placing a low budgetary priority on beach erosion control and shore protection is misguided. Numerous studies have shown that beach nourishment is successful and cost-effective. Beaches produce revenues for all participants far in excess of the relatively nominal costs for replenishment, and beaches are an inseparable part of the Nation's coastal marine resources.

Also misguided is the reluctance of the Government to support reimbursable water projects. Reimbursable beach erosion control projects can be more efficient, more timely, and more cost-effective than projects conducted by the Federal Government. Budgetary requirements for reimbursable projects can indeed be predicted accurately. Further, when the respective roles of the local sponsor and the Government are clearly understood, reimbursable projects tend to utilize Federal engineering resources more efficiently than Federally-constructed projects, and the projects tend to be conducted with a higher sensitivity to the local environment.

In support of protecting, restoring, and preserving the Nation's beaches more effectively, Broward County recommends the following policy/legislative initiatives:

*a.* Recognize and acknowledge the inevitability of coastal erosion and the need to replenish beaches when necessary;

*b.* Apportion costs for beach nourishment consistent with the actual benefits derived from healthy beaches;

*c.* Raise the budgetary priority of beach erosion control equal to that of other important national infrastructure; and

*d.* Develop a dedicated source of Federal funding for beach erosion control projects.

*e.* Encourage reimbursable projects.